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29TH YEARLY CELEBRATION

Research Festival 2015 Lauds 'Amazing Place to Do Science'

BY CARLA GARNETT

"There are 8 million stories in the naked city," to quote a line from classic TV, "and this is 1" or a dozen of them. As usual, NIH's yearly Research Festival presented some of the best tales in its own "city"—the Intramural Research Program—for the 29th celebration of in-house science since 1986.

"The intent of the Research Festival is to get people out of the laboratories, out of the clinics and talking to each other about their science with the hope of stimulating activities that are even more exciting than the ones currently going on," said NIH deputy director for intramural research Dr. Michael Gottesman, opening the 3-day event on Sept. 16.

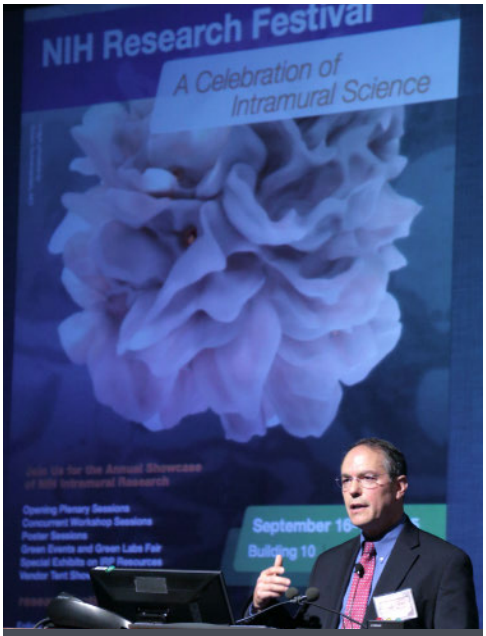
"There's one thread that runs through all of the Research Festivals and that is that this is an amazing, amazing place to do science," he said. Part of the IRP's long-term success is due to the fact that "we not only attract many talented people, but we [also] provide long-term support and encouragement for what could be viewed in some places as high-risk activities."

Simple Question Plants a Seed

At the first plenary session, "Creating NIH Technology Incubators," Dr. Peter Choyke described a research seed planted far outside the lab, at a backyard party held by his NCI colleague Dr. Marston Linehan.

"This is a story about people and

SEE **FESTIVAL**, PAGE 6



NCI's Dr. Peter Choyke at the opening plenary session of NIH Research Festival 2015

Scientific research fit for a queen? See story, p. 5.

ALSO THIS ISSUE

BRIGGS NAMED INTERIM DIRECTOR

Collins Welcomes Working Group's PMI Plan

BY RICH MCMANUS

NIH director Dr. Francis Collins has enthusiastically embraced the summer-long efforts of an advisory committee to the NIH director working group on the President's Precision Medicine Initiative (PMI). The PMI workgroup presented him on Sept. 17 with a report outlining how to enroll a cohort of more than 1 million Americans by 2020 in an effort to, as HHS Secretary Sylvia Burwell has explained, "tailor disease prevention and treatment to individuals based on genetics, environment and lifestyle."

"This is an excellent report," Collins told reporters during an hour-long media telebriefing that afternoon, "an excellent framework...The stars are aligning."

He cautioned that PMI "is not just a genomic project. We are taking a much

SEE **PMI**, PAGE 4

And they're off...32nd Institute Relay is in the books.

'Run from Obesity' Wins Institute Relay for Second Straight Year

BY ERIC BOCK

Dr. Jesse Carlin was shocked. A day before the 32nd NIH Institute Relay, one of the runners on her 5-member relay team, NIDDK's "Run from Obesity," dropped out of the race. For good reason, it turned out: the runner had appendicitis. Carlin scrambled to find another runner.

SEE **RELAY**, PAGE 8

Dr. David Winter (l) and Martin Johnson show off their paddling hardware.

NIH'ers Earn Medals in Boating Championship

NIH is known for its world-renowned scientists, but often its staff excel as athletes in a number of disciplines as well. In addition to high-performance cyclists, runners, swimmers, rowers, weightlifters and soccer players, we can now add dragon boat racers to the list. A dragon boat is a traditional Chinese racing canoe that holds 20 paddlers and is the largest human-powered racing boat on the water. Such boats are traditionally used for sprint racing.

Recently, Martin Johnson of NIAID and Dr. David Winter of CSR participated in the International Dragon Boat Federation World Championship as members of the U.S. national team. The event drew teams from across Europe, Asia, the Americas and Australia to compete over 5 days at the Welland International Flatwater Racing Center in Ontario, Canada.

This is Johnson's second time on the U.S. team. At Welland, he competed as a member of the U.S. masters mixed (men and women) team, winning bronze medals in the 1,000, 500 and 200-meter distances. Winter, a veteran paddler with more than 14 years in dragon boating, has now raced with the U.S. national team four times. This year he competed as a member of the masters men's team, which won silver medals in the 2,000, 1,000 and 500-meter distances and bronze in the 200-meter race.

Both NIH'ers are active in the D.C. area dragon boat community and coach and race on several teams including the DC Dragons, GoPink!DC and the local masters team, DC Over 40. The local dragon boat community would like to get more people involved in the sport. If you are interested, send an email to winterd_2000@yahoo.com or visit www.ncawpa.org/#sthash.bt8GoMSA.2a2sPXQW.dpbs.

NIDA director Dr. Nora Volkow (l) with (from l) 3rd place winner Kashfia Nehrin Rahman, 1st place winner Glenn Yu, 2nd place winner Ralph Lawton, Charles O'Keeffe (Friends of NIDA) and Dr. William Dewey (chair, Friends of NIDA)

NIDA Hosts Winners of Addiction Science Awards

The 2015 winners of NIDA's Addiction Science Awards, part of the Intel International Science and Engineering Fair (ISEF), presented their projects to NIDA director Dr. Nora Volkow and other NIDA scientists recently and later toured the NIH campus. The awards are coordinated by NIDA as well as Friends of NIDA, a private group dedicated to furthering NIDA's mission. ISEF is the world's largest science competition for high school students.

First place was awarded to Glenn Yu, a high school senior at Hunter College High School in New York City, for his project "Naturalistic Painkillers: Design, Synthesis and Biological Evaluation of Novel Fatty Acid Binding Protein Inhibitors." Yu, 17, used computational modeling, chemical synthesis of analogs and biological testing to identify and theoretically build a more effective and safer pain reliever. The novel compounds he developed are designed to affect the endocannabinoid system, which has proven effects on pain, inflammation, stress and drug withdrawal.

Second place went to Ralph Lawton, 16, a student at the Pennsylvania Leadership Charter School-University Scholars Program in West Chester. The high school junior's project, "Don't Be Led Ashtray: Toxicological Effects of Electronic Cigarettes on Inflammation and Lung Cell Viability with Comparison by Brand, Flavor and Generation," looked at the toxicological effects of e-cigarette vapor on lung cell viability and inflammation. Using a comparison to tobacco cigarettes, his project suggests that tobacco vapor can be just as damaging to lung cells as traditional cigarette smoke.

Winning third place was Kashfia Nehrin Rahman, a freshman at Brookings High School in Brookings, S. Dak. Her project, titled "Nomophobia: Effects of Smartphone Dependence and Separation on Stress, Anxiety, Memory and Cognition in Developing Adolescent Brain," found direct correlation between stress and the temporary loss of a cell phone, which she called "nomophobia" for "No More Mobile Phone."

Fun Events Support 2015 CFC

Two entertaining events are planned this month in support of the NIH Combined Federal Campaign.

The CFC Directors' Challenge adopts a new spin this year—a game of disc golf will take place from 10 to 11 a.m. Thursday, Oct. 22 in front of Bldg. 1. The institute directors, joined by NIH director Dr. Francis Collins, will compete in teams, testing their hand-eye coordination, speed, strength and sense of humor as they show their support for the CFC.

Then on Thursday, Oct. 29, the R&W will host a Halloween Charity Fair from 11 a.m. to 1 p.m. on the patio of Bldg. 31A. Stop by in your favorite costume for prizes and treats. Food from Chick-Fil-A, Hard Times Café and Ben & Jerry's will be available for purchase. Enjoy trick-or-treating at the charity tables and learn how the organizations help people in our community.

NIGMS To Host Cell Day Web Chat, Nov. 5

On Thursday, Nov. 5 from 10 a.m. to 3 p.m., NIGMS will host Cell Day 2015, a web chat targeted to middle and high school students but open to all. Students from around the country will be able to ask NIGMS scientists questions about cell biology, biochemistry, research careers and other related topics. To join the live chat or get additional information about Cell Day, see http://nigms.nih.gov/cellday.

GO4LIFE

Stepping Toward Healthy Aging—A Capitol Walk

BY ERIN CALHOUN

The sun is shining, the air is crisp, the leaves are turning golden amber—what could be better than an invigorating walk outside?

If you happened to be in the nation's capital on Sept. 18, you might have seen a sea of older adults along with a few recognizable faces doing just that. U.S. Surgeon General Vice Admiral Vivek Murthy, National Institute on Aging director Dr. Richard Hodes, fitness expert Donna Richardson and White House Conference on Aging Executive Director Nora Super were joined by more than 100 energized older adults from across the Washington, D.C., area for a scenic walk from the Hubert H. Humphrey Bldg. past the United States Botanic Garden, the west side of the U.S. Capitol, several presidential monuments, the Peace Monument and back again.

The event: A Capitol Walk with Go4Life. The inspiration: the Go4Life exercise and physical activity campaign for people 50+ from NIA and *Step It Up! The Surgeon General's Call to Action to Promote Walking and Walkable Communities*.

Both NIA and the surgeon general's office are actively encouraging people to get moving, no matter their age. Go4Life calls for a balanced exercise program of strength, flexibility, balance and endurance. One way seniors can help to meet those goals is by walking, which the surgeon general pointed to as "one of the most powerful things we can do to improve our health."

U.S. adults tend to become less active as they get older. As a result, they miss out on the health benefits of regular physical activity, such as reduced risk of disability, heart disease, obesity, stroke, diabetes and other chronic conditions.

"The good news," noted Hodes, "is you're never too old to start exercising. That's what motivated NIA to launch the Go4Life campaign."

Established in 2011, Go4Life looks to empower older adults to become more physically active with age. It offers exercises, motivational tips and free resources in English and Spanish to help people get ready, start exercising and keep going. With its more than 300 national and local partners, the campaign reaches into communities to help older adults be active every day.

A Capitol Walk with Go4Life was NIA's premier local event in recognition of the campaign's inaugural month this September in collaboration with the White House Conference on Aging. Many Go4Life partners and supporters joined NIA for the walk, including HHS's Administration for Community Living; the President's Council on Fitness, Sports and Nutrition, of which Richardson is a member; the National Council on Aging; Oasis; Georgetown University School of Nursing; Sunrise Senior Living; the Association of State and Territorial Health Organizations; the HHS FedStrive occupational health program; and the D.C. Metropolitan YMCA.

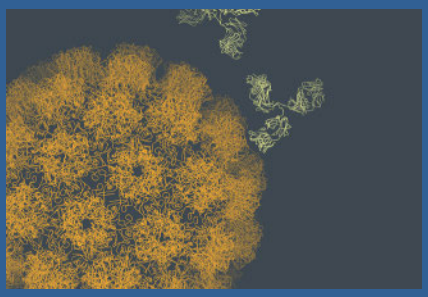
Leading the Capitol Walk were (from l) NIA's Dr. Chhanda Dutta, Edwin Walker, Nora Super, Surgeon General Vivek H. Murthy, Donna Richardson, NIA director Dr. Richard Hodes, NIA deputy director Marie Bernard and NIA's Dr. Lyndon Joseph. Below, an energetic participant warms up before the walk.

PHOTOS: CHARLES ARCHAMBAULT

The walk was but one event featuring aging and exercise during Go4Life Month. Across the U.S., partner organizations hosted a wide range of activities including workout classes, relay races, free health screenings and health and wellness fairs.

NIA's Karen Pocinki, director of Go4Life, said, "Older adults are awesome. This event and those taking place across the country highlight how important it is to stay active to stay healthy. It has been a labor of love to translate research results into practical tips and tools to help individuals Go4Life every day."

A walker from the YMCA shared her sentiment. "Today's event? Remarkable. Why? Because we get a chance to show people that seniors like us don't have to sit on the sofa. We're active and we want others to be active, too!" R



ON THE COVER: *Detail of artwork used for 2011 poster. Image shows antibody approaching a virus.*

IMAGE: NIH MEDICAL ARTS

The NIH Record

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NIH National Institutes of Health
Turning Discovery Into Health

NCI acting director Dr. Douglas Lowy explains his institute's component of PMI at a stakeholders' briefing in Wilson Hall.

PMI

CONTINUED FROM PAGE 1

broader view...This is an inflection point of a very significant sort."

Collins announced that while a nationwide search for a PMI director will begin soon, the effort will be led in the interim by Dr. Josephine Briggs, director of the National Center for Complementary and Integrative Health. The first task is to prepare a research infrastructure and to begin enrolling, in January 2016, a cohort that reflects the diversity of the U.S. population with respect to age, gender, race and ethnicity.

"But this is all contingent upon congressional appropriations," noted Collins, just days before the end of fiscal year 2015; PMI is budgeted at $215 million in FY 2016—$130 million for the large-scale cohort and the balance for an NCI component.

Collins said PMI is "a long-term endeavor," scheduled to last at least 10 years. "I hope to see it go much longer," he said, calling it a complex and ambitious initiative that could rival the Framingham Heart Study, ongoing since 1948, as a producer of useful medical knowledge.

In response to questions from reporters, Dr. Kathy Hudson, NIH deputy director for science, outreach and policy, said there are "two doorways to enter the study"—via health care provider organizations such as Kaiser Permanente, which have already established electronic health records (EHRs), or by "anyone, anywhere, simply signing up as a direct volunteer."

Hudson said, "Motivations to participate are multiple...there is a strong thread of altruism that we hope to tap into...People are interested in getting [medical] information back about themselves. Our surveys have shown that people find it attractive."

Collins said NIH is "very much aware of opportunities" offered by already-existing cohorts, which, in addition to KP, include Geisinger Health System, Intermountain Healthcare, Mayo Clinic, Marshfield Clinic and others.

"It will be very valuable to build upon [these cohorts]," he said. "We very much want to engage with them." Collins said both arms of enrollment—volunteer and legacy cohorts—"are going to be pursued avidly...The value of a cohort gains over time."

PMI workgroup cochair Dr. Richard Lifton of Yale University, who also participated in the telebriefing, predicts that some cohort enrollees might find themselves invited to participate in future clinical trials, based on a spectrum of personal characteristics.

Collins added that EHR technology itself will likely be revamped and upgraded as PMI progresses. "Perhaps we can move the needle in improving the way EHRs function overall," he said.

One reporter wondered what NIH would do if 3 million people wanted in on the study. "That's a potentially serious possibility," said Collins. "There's been a lot of increase in the public's interest in participating in research. When you open the door to the nation, you don't know how many will respond. But it's a great problem to have. Maybe we'll have to say, 'Going fast! Only a few tickets left!'"

PMI will rely heavily on mHealth, or mobile health, with enrollees using smartphones and personal devices such as Fitbits and Jawbones to collect and monitor health data, said Dr. Josh Denny, associate professor of biomedical informatics and medicine at Vanderbilt University, another PMI advisor.

Collins imagines that some cohort enrollees could be fitted with wearable

★ ★ ★

"When you open the door to the nation, you don't know how many will respond. But it's a great problem to have. Maybe we'll have to say, 'Going fast! Only a few tickets left!'"

–DR. FRANCIS COLLINS

★ ★ ★

Participating in a PMI briefing for stakeholders on Sept. 25 at NIH are (from l) Dr. Kathy Hudson, NIH deputy director for science, outreach and policy, NIH director Dr. Francis Collins, and Lowy.

PHOTOS: BILL BRANSON

environmental sensors, to gather more data on how where we live contributes to health or disease.

Asked to sum up PMI's value, Lifton concluded, "This is a meritorious thing to do, a really extraordinary and unprecedented opportunity to determine personal disease cause and risk...It also offers open access to all investigators, offering novel analytic capability."

Collins emphasized that cohort participants "are partners in all we do."

"We've been welcomed to the table," said PMI cochair Bray Patrick-Lake of Duke University, a disease advocacy activist who admitted to having been skeptical about PMI at the outset. "PMI is committed to doing what's right, not what's easy."

"I think we're on a pathway that can be quite transformative," said Collins. "It's going to teach us a lot about health...We are thrilled to be given this charge by the President."

Principles of Clinical Research Class

Registration for the 2015-2016 "Introduction to the Principles and Practice of Clinical Research" is now open. The course will run from Oct. 13 through Mar. 22, 2016. Classes will be held on campus in Lipsett Amphitheater, Bldg. 10 at 5 p.m.; you can attend in person or online. There is no charge for the course but purchase of a textbook is suggested. A certificate will be awarded upon successful completion of the course, including a final exam. For more information or to register, visit http://clinicalcenter.nih.gov/training/training/ippcr.html or contact course coordinator Daniel McAnally at daniel.mcanally@nih.gov or by calling (301) 496-9425.

Community College Day, Oct. 20

The NIH Office of Intramural Training & Education will hold Community College Day 2015 on Tuesday, Oct. 20 from 8 a.m. to 4 p.m. at the Natcher Conference Center. Community college students and faculty will visit the NIH campus and learn about careers and training opportunities in biomedical and health care fields. For details, visit www.training.nih.gov.

A ROYAL WELCOME

Queen of Spain Pays Call on NIH

Her Majesty Queen Letizia of Spain was welcomed to the Clinical Center Sept. 16 by NIH director Dr. Francis Collins (below, c) and Clinical Center director Dr. John Gallin. The queen was accompanied by Carmen Vela Olmo, secretary of state for research, development and innovation of Spain. During a 90-minute Bldg. 10 visit, the entourage toured NCI's Pediatric Oncology Branch, where Dr. Lee Helman (bottom, r), acting director of the Center for Cancer Research, described the branch's work. The group also met for an exchange of views in the medical board room, where Collins presented the queen with a memento—a lapel pin shaped like a guitar pick, with the message "Hope at NIH." Also on hand was Dr. Jorge Baselga, (below, middle) president of the American Association for Cancer Research, who flanks the queen with Dr. Marge Foti, CEO of AACR.

PHOTOS: ERNIE BRANSON

Research Festival

CONTINUED FROM PAGE 1

machines," said Choyke, a senior investigator in NCI's Molecular Imaging Program. Seems that party chitchat turned quickly to shop talk when a young urologist named Dr. Peter Pinto "somewhat indignantly" posed a question: "Why is the prostate the only organ in the body that is biopsied blind?"

That simple query led to formation of a multidisciplinary team determined to improve precision in prostate biopsy (and eventually treatment) via image-guided needle navigation. Experts in radiology, pathology, cancer ablation and ultrasound, biomedical engineering, physics and IT all ultimately had roles in Choyke's story, which resulted in NIH patenting and licensing a new technology—magnetic resonance-ultrasound guided biopsy.

"I want to call out the atrium of Bldg. 10 as an extremely big incubator for good ideas," Choyke said. "I'm happy to report that there have been many copycat technologies... American ingenuity being what it is," 4 or 5 companies now offer their own variations. Thousands of patients are benefiting across the country and the world.

> *"I want to call out the atrium of Bldg. 10 as an extremely big incubator for good ideas."*
>
> –DR. PETER CHOYKE

As Gottesman had hoped, the telling of one story immediately prompted a new potential story. One of the first questions to Choyke came from another investigator in the audience: Could the image-guided tech be applied to other cancers that use CT or other imaging? Answer: Absolutely.

Therein lies the beauty of the NIH Research Festival.

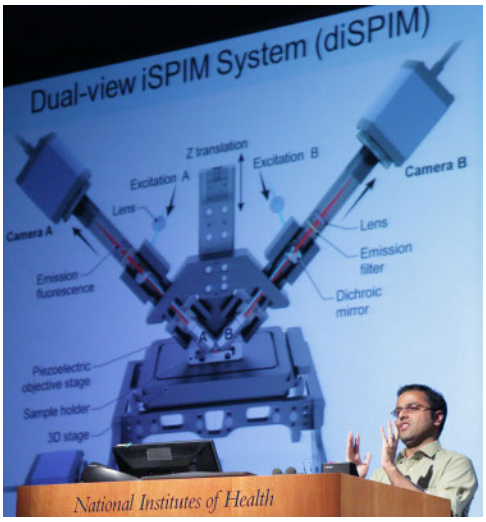
'Rendezvous for Tech Designers, Users'

Next up at the plenary was NIBIB optical microscopist Dr. Hari Shroff, whose story involved NIH development of systems that can provide real-time high-resolution imaging of living organisms and build neurodevelopmental atlases. There are now more than 30 of his "high-speed, high-resolution, non-invasive light-sheet microscopy" systems worldwide; 6 are located here.

"What gets me up in the morning is thinking about how to make optical microscopes better," Shroff said. He also announced the creation of a trans-NIH advanced imaging facility that will house next-generation microscopes and be a "rendezvous point for designers as well as users and perhaps stimulate new research in both directions." Construction on the facility is set to begin on campus later in 2015.

Top left: As part of the Future Research Leaders Conference poster session—new this year to the Research Festival—Brown University's Dr. Christopher Arellano (r) describes his work. The conference sponsored by the NIH chief officer for scientific workforce diversity seeks to engage exceptional early-stage investigators from diverse backgrounds and increase their awareness of career options here. **Top right:** NIBIB's Dr. Hari Shroff talks about the real-time hi-res non-invasive microscopes he designs. **Above:** Participating in the plenary on chronic inflammation are (from l) NIAMS director Dr. Stephen Katz, NEI senior investigator Dr. Rachel Caspi, NIH deputy director for intramural research Dr. Michael Gottesman, NHLBI senior investigator Dr. Neal Young, NHLBI investigator Dr. Angélique Biancotto, NINDS tenure-track investigator Dr. Daniel Reich, NIAMS scientific director Dr. John O'Shea and NIAID senior investigator Dr. Thomas Wynn.

PHOTOS: BILL BRANSON, ERNIE BRANSON, LISA HELFERT



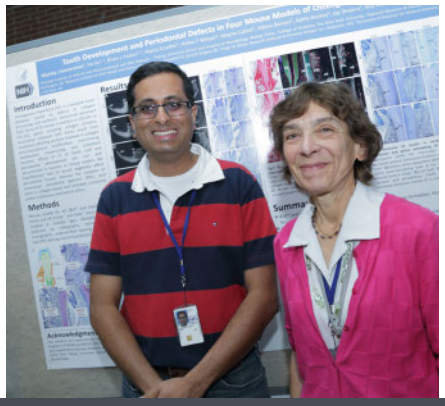
"What if you could walk into a cancer cell and compare it to a normal cell and...get statistically useful information?" asked NCI's Dr. Sriram Subramaniam, discussing yet another NIH success—the cryo-EM revolution. His current research, begun more than a decade ago, looks at four problems: 3D mapping of mammalian cells, spatial architecture of signal transduction, mechanisms of HIV entry and the structures of membrane proteins and protein complexes involved in metabolism.

At the time, he pointed out, he knew almost nothing about any of these issues at the cell biology level.

Tolerating Uncharted Exploration

"The intramural program is the only place where something like this would ever be tolerated, where [people] can work on something that they did not know anything about, but expressed good faith that this was something they wanted to do," Subramaniam quipped, drawing nods of agreement and laughter from the audience. "If I were on the outside, perhaps at a university, the chances that I would be out looking for work in 2 years would be very, very high."

This year's festival was unique because the lectures, panels and workshops represented first fruit from the IRP's long-term planning process involving not only scientific directors and current senior investigators, but



Above (from l): Another Future Research Leader, Dr. Jessica Scoffield (l) of the University of Alabama-Birmingham, discusses her poster. At the institute and center directors' poster session, NIDCR director Dr. Martha Somerman (r) offers food for the mind as well as the body—with NIAMS clinical fellow Dr. Vivek Thumbigere, she describes the effects of osteogenesis imperfecta, a heritable bone disorder, on periodontal tissues in mouse models of OI. At right, with NIDCR research fellow Dr. Fnu Aomin, Somerman offers what she called "precision-designed, molar- and incisor-shaped sugar cookies—results not reproducible." **Below:** Gottesman describes the rich history of the NIH Intramural Research Program and its long-term plan for the next decade.

also tenure-track scientists still early in their careers at NIH.

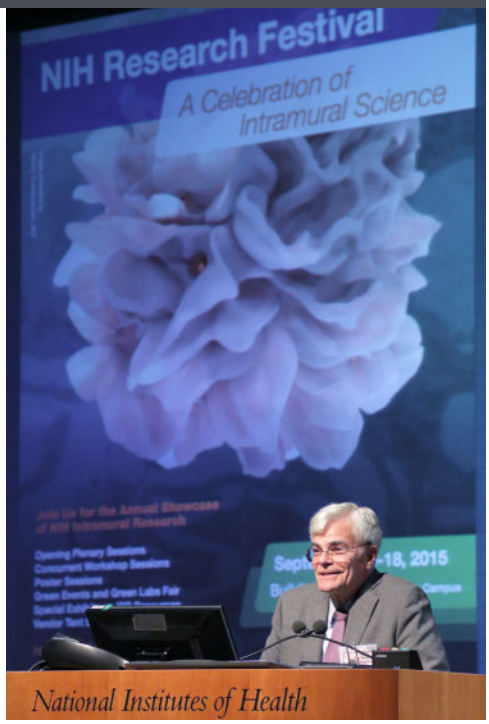
"Two years ago, we began thinking about the kind of intramural program we would like to fashion over the next 10 years," Gottesman explained. "One important aspect of that was what kind of science would we be doing, what kind of resources did we need, what kind of approaches did we need to do that science. So, this is a chance not only to highlight exciting research within the intramural program but also to kick off the implementation of what will be a 10-year effort...We particularly focused on the special features of the Intramural Research Program that we should be exploiting, that we should be emphasizing, that we should be reinforcing in any way we possibly could."

NIH director Dr. Francis Collins introduced day 2's plenary session, "Responding to Public Health Emergencies," particularly the Ebola outbreak crisis over the last year. He emphasized "the absolutely central role" NIH had (and continues to have) in treating patients both in Africa and at the Clinical Center in addition to establishing initial vaccine research in Africa and providing human resources and support in other areas such as infrastructure-building. Collins also briefly mentioned other global disasters that have drawn NIH's help and research response over the last few years, including the Japan earthquake and subsequent Fukushima Nuclear Plant accident, the Deepwater Horizon oil spill and Hurricane Katrina.

'Whole Greater Than Amazing Parts'

Plenary 3 on Sept. 18 discussed "Chronic Inflammation." That session, Gottesman said, illustrated "our capacity to attack really complicated problems by working together across institutes and centers, and by harnessing the enormous talent we have here, in this case in immunology. There are several hundred immunologists on this campus and we are sure that the whole working on the problem together will be greater than the sum of the individual amazing parts."

On a panel discussing how NIH responds to public health emergencies are (from l) NLM's Dr. David Lipman, Dr. Pamela Collins of NIMH, NIAID's Dr. Cliff Lane and director Dr. Anthony Fauci, and NIEHS director Dr. Linda Birnbaum.



Rounding out festival activities were 6 workshops organized to explore extraordinary opportunities in areas of general interest across NIH. In addition, more than 500 posters were displayed. Also new for 2015 was a special poster session arranged by the NIH chief officer for scientific workforce diversity introducing 28 early-career scientists from across the country in the hopes that some of them would be recruited to spend part of their careers at NIH.

Tours, an NIH Library open house, the Technical Sales Association tent show and a lunch were also part of the festivities. You can catch the full plenary sessions archived by date online at videocast.nih.gov.

Relay

CONTINUED FROM PAGE 1

Despite the last-minute substitution, "Run from Obesity" won the relay for the second year in a row. They finished the Sept. 15 race in 13:23—10 seconds faster than their time last year. Once again, the team name will be engraved on the Allen Lewis NIH Memorial Trophy in the Bldg. 31 Fitness Center. NEI's "Wurtz Possible Runners" finished second at 13:25 and NIA Baltimore's "Intermittently Fast" came in third at 13:38.

This year, a relay record 107 teams ran in two heats on a picture-perfect day. Just as in years past, many teams had creative nicknames. "I cannot tell A-fib," "Cell my soul," and "Paindemonium" are just a few.

"We're happy to have seen a record number of teams run the race," said the NIH Recreation and Welfare Association's David Browne. "It's really nice to see so many NIH'ers come out and enjoy themselves. The relay is a great way to get some exercise in and have fun doing it."

Before the first heat, former R&W president and relay organizer Randy Schools explained the rules. The first four runners must complete a loop around Bldg. 1 then hand off a baton to the last runner in an exchange area near the starting line. The final runner on each team must run the loop and then turn right at a chute to the finish line on the Bldg. 1 driveway. He cautioned runners to be on the lookout for cars. Then, NCI's Dr. Harold Seifried played a "call to the post" on the trumpet.

Second Place: NEI's "Wurtz Possible Runners" include (from l) Whitney Griggs, Kazutaka Maeda, Frances Loeb, Elisabeth Tawa and Fabrice Arcizet.

Next, NIH director Dr. Francis Collins spoke to the crowd. He said he would like to have run, but he wasn't dressed for the occasion (he wore a suit and tie). He reminded runners, "The goal is to have fun and don't get hurt." With that, he blew the starting whistle. Coworkers and friends cheered on the runners as they crossed the starting line.

Winning the relay once is hard. Winning twice in a row is harder. To prepare for the challenge, Carlin and her team practiced handing off the baton to each other so they wouldn't lose any time in the exchange zone. She said they even trained underwater to slow their natural movement when they handed the baton off. She added that, fortunately, the coworker who missed the race because of appendicitis will be fine.

Browne said the relay couldn't happen without the support of more than 60 volunteers who helped staff the event, the relay captains who made the effort to recruit runners and the vendors. He appreciates Collins taking time out of his schedule to address the runners before the race and hopes to see everyone again next year.

The relay was hosted by R&W, members of the original NIH Health's Angels running club and the Office of Research Services' Division of Amenities and Transportation Services.

Melanie Rys (l) receives the baton from Karen Keeran of NHLBI's "I cannot tell A-fib."

Lulu Hefferon, 3, cheers for her father Tim Hefferon of NCBI's "Paper Tigers."

First Place: NIDDK's "Run from Obesity" includes (from l) Dr. Michael Krashes, Dr. Jesse Carlin, Courtney Duckworth, Sebastian Zahler and Dr. Ramón Piñol.

PHOTOS: DANIEL SOÑÉ

Top 10 Finishers

Run from Obesity	13:23
Wurtz Possible Runners	13:25
Intermittently Fast	13:38
THE FAB FIVE	14:05
Proud Snail Hunters	15:06
Hey Ho, Let's Go	15:10
NITAAC's Need for Speed	15:31
Say What?	15:35
NINDigenouS People	15:39
5'RACE	15:44

Murray Gives Next 'Mind the Gap' Seminar, Oct. 23

Dr. David M. Murray, NIH associate director for prevention and director of the Office of Disease Prevention, will present his talk "Design and Analysis of Studies to Evaluate Multi-Level Interventions in Public Health and Medicine" at the next Medicine: Mind the Gap seminar. It will take place Friday, Oct. 23, from 9:30 to 10:30 a.m.

During the webinar, Murray will describe the best options for evaluating multi-level interventions, which aim to improve the public health by exerting influence on multiple levels, such as families, individuals, health care providers and physical and social environments.

"Group or cluster randomized trials have been suggested as the gold standards for evaluating multi-level interventions, but other methods exist and should be explored," said Murray. "Understanding the strengths and weaknesses of these methods will give investigators more knowledge to plan their studies in a way that promotes the best possible outcomes for patients seeking preventive or therapeutic gains."

Murray has spent his career evaluating intervention programs designed to improve public health. He has authored more than 230 peer-reviewed articles and published the first book about the design and analysis of group-randomized trials.

Murray will accept questions about his presentation via email at prevention@mail.nih.gov, on Twitter with #NIHMtG and through the WebEx webinar software.

Register for the event at www.prevention.nih.gov. View the live videocast at https://nih.webex.com/nih/onstage/g.php?MTID=ef829755fc3eb675699f354c5d5341e88.

STETTEN LECTURE

Neurobiologist Sengupta To Discuss Cilia Form, Function

The surface of most cells in humans and other multicellular animals sports a single, antenna-like structure called a primary cilium. This microtubule-based organelle senses the environment around a cell, gathering incoming signals and transmitting the information to the cell's interior. Disruption of cilia structure or function underlies a broad range of human genetic diseases known as ciliopathies, many of which are marked by sensory deficits such as hearing and vision loss.

Cilia research is the focus of this year's DeWitt Stetten Jr. Lecture by Dr. Piali Sengupta of Brandeis University. Her talk, on Wednesday, Oct. 21 at 3 p.m. in Masur Auditorium, Bldg. 10, is titled "Form Meets Function: Structurally Diverse Cilia and Their Roles in Sensory Signaling." The event is part of the NIH Director's Wednesday Afternoon Lecture Series and is sponsored by NIGMS.

Taking advantage of the simple and well-defined nervous system of *C. elegans*, Sengupta and her colleagues have begun to correlate the detailed structures of primary cilia on the worm's sensory neurons—nerve cells that transmit information such as odors or touch—with their specialized functions. As in other organisms, the development and maintenance of correct cilia structure is essential for the unique sensory properties of each neuron type in *C. elegans*.

Sengupta and members of one group in her lab, nicknamed the Cilia Squad, have shown that cilia structure and neuronal functions are interdependent and have identified genetic pathways required for generating and maintaining the forms and structures of neuron-specific cilia. In a recent collaboration with Daniela Nicastro at Brandeis, they reconstructed the three-dimensional architectures of 50 of the 60 sensory cilia in *C. elegans*, revealing a wide range of cilia shapes in unprecedented detail.

Because the mechanisms of cilia formation are remarkably similar across many species, Sengupta's work has provided insights into how altered cilia function contributes to disorders affecting these cell structures, such as Bardet-Biedl and Joubert's syndromes.

Sengupta is a professor in the department of biology and a member of the National Center for Behavioral Genomics and the Volen National Center for Complex Systems at Brandeis, where she has been on the faculty since 1996. She earned an A.B. in biology from Bryn Mawr College in 1985 and a Ph.D. in biology at the Massachusetts Institute of Technology in 1991. She began studying sensory responses in *C. elegans* as a postdoctoral fellow with Cori Bargmann at the University of California, San Francisco.

Sengupta's honors include a Sloan research fellowship, a Searle scholar award, a Packard Foundation fellowship and an NIH MERIT award. She serves on the editorial boards of *Genetics*, *PLOS Biology* and *eNeuro* and is a member of several fellowship and grant review panels.

For more information or for reasonable accommodation at the lecture, contact Jacqueline Roberts at Jacqueline.Roberts@nih.gov or (301) 594-6747.—**Elia Ben-Ari**

Dr. Pauline Kay Lund

IT'S ACADEMIC

Lund Heads New Biomedical Research Workforce Division

BY MANJU SUBRAMANYA

Coming from a hardscrabble background has made Dr. Pauline Kay Lund appreciative of those who mentored her along the way. Her rich career in academia, mentoring young scientists at the University of North Carolina at Chapel Hill and beyond for 33 years, has provided a unique perspective.

Her experience will stand her in good stead as director of NIH's newly created Division of Biomedical Research Workforce in the Office of Extramural Research (OER), with responsibilities for shaping the future direction of research training for the biomedical workforce.

The division is part of a slew of solutions emerging from NIH's high-profile biomedical workforce initiative to address a growing challenge—more Ph.D.s than tenure-track jobs—that has sparked a national conversation.

"Dr. Lund has been intimately involved with these issues and made it her mission to mentor trainees at UNC," said Dr. Sally Rockey, former NIH deputy director for extramural research and OER director. "She brings a lot of passion to training and workforce issues. We are excited to have her on board."

Growing up in the tiny town of Golborne, England, Lund was in the first generation of her family to attend college. Her grandfather was a coal miner; her mother a textile worker. She is thankful for British university funding and the mentors who guided her U.S. career since she landed in Boston as a fellow in 1979.

Lund has spent a lifetime mentoring trainees—from students to senior faculty—at UNC, where she served as Sarah Graham Kenan professor of cell and molecular physiology, winning mentoring awards. Lund was the first to clone the proglucagon gene that led to the discovery of two new hormones now used in clinical trials and holds two patents.

"Whenever I met with trainees," she said, "I increasingly heard concerns of whether they will make it in research with the current level of research and funding."

Lund applauds the solutions under way before her arrival at OER, crediting a great team: higher stipends for postdoctoral researchers; a new, user-friendly Research Training & Career Development web site; a new eRA system, xTRACT, "an incredibly useful tool" to gather data on NIH-funded trainees; and a new program, BEST, which exposes Ph.D.s to research careers outside of conventional academia.

Lund, mentored by the late Dr. Jud Van Wyk, considered a father of pediatric endocrinology, is also contemplating programs that encourage scientists to learn through pairing—say, a physiologist with a biomedical engineer. A 2016 workshop on encouraging physician scientists to enter research earlier is also planned.

Outside work, Lund enjoys walking with her husband, artist Mark Smith; reading, especially science fiction; eschewing TV and listening to NPR; and cooking traditional English and Indian dishes. "There is something about molecular biology and cooking that go hand in hand," she chuckled.

The couple has two daughters—Emma, a medical resident in Philadelphia and Alice, a high school science teacher in Winston-Salem, N.C.

So does she look to mentor Emma and Alice? "We turn to each other for advice, as all are in new jobs," she said with a smile.

CSR Division Director Garte Retires

BY PAULA WHITACRE

Dr. Seymour Garte, who retired as director of the Division of Physiological and Pathological Sciences in the Center for Scientific Review recently, is looking forward to thinking about new evolutionary theory and the relationship between science and faith.

"I see no boredom in sight," he quipped. Through a nonprofit he created called the Natural Philosophy Institute, Garte will study and write about the theoretical aspects of science in which he has long been interested, but never had time to pursue fully. The John Templeton Foundation awarded the institute a grant for the project.

Garte came to NIH in 2009 after a career in academia. "I was at the University of Pittsburgh but wanted to look at different opportunities in science administration or writing," he said. As a CSR division director, he helped coordinate and strengthen the peer review process. In addition to overseeing the work of about 40 scientific review officers, he worked with other CSR senior staff to ensure peer review policies and practices remained consistent and of high quality across CSR's many study sections and special emphasis panels.

Dr. Seymour Garte

"The place is terrific," he said of his 6 years at NIH. "The people are wonderful. I really enjoyed it."

CSR deputy director Dr. Rene Etcheberrigaray said Garte's background resulted in a unique perspective. "As a long-term academician, he was one of the first CSR division directors who came from the 'outside,'" Etcheberrigaray said. "He brought a different way of viewing things and how to accomplish our mission."

Etcheberrigaray also praised Garte's analytic strengths, which he used to help CSR pioneer several projects, including a method of bibliometric analysis to determine how peer review outcomes could predict the impact of NIH-funded research.

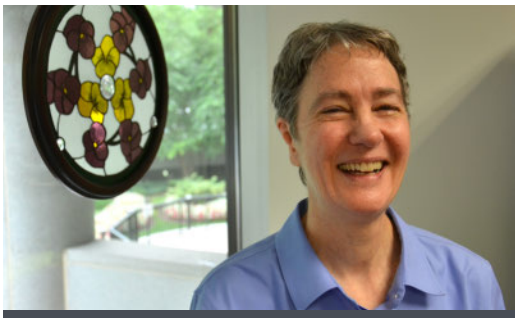
"Sy has a great sense of humor and would bring up a comment in many discussions that made us laugh but also moved the conversation along," said Dr. Karyl Swartz, director of the Division of AIDS, Behavioral and Population Sciences. She also praised his passion for the quality and fairness of peer review, which, she said "permeated all that he did while at CSR."

Garte spent the first part of his life in New York. He majored in chemistry, followed by a Ph.D. in biochemistry at City University of New York. Garte went on to the Institute of Environmental Medicine at New York University, rising to full professor in 1992. Supported by NIH and other institutions, his research focused on environmental toxicology and molecular oncology.

For about a decade, he had one of the more unusual academic commutes, serving as professor of public health at Rutgers in New Jersey and scientific director of the Genetics Research Institute in Milan, Italy. In 2005, he moved to the University of Pittsburgh.

In addition to more than 200 peer-reviewed papers and 3 academic books, Garte wrote *Where We Stand*. The 2007 mass-market book focuses on improvements in the environment since the 1970s. Explaining the book's genesis, he said, "Neither I nor anyone I spoke to knew the extent of the positive effects of environmental laws and regulations." Considering a sequel, he is writing another book on science and faith.

With his work through the Natural Philosophy Institute, along with learning the saxophone (he already plays guitar and flute), Garte won't have to worry about a boring retirement.



Dr. Anne Clark

Clark Retires from CSR

BY PAULA WHITACRE

Science and art both require creativity and discipline. Fortunately, Dr. Anne Clark has both in good measure.

Clark retired recently as associate director in the Division of Receipt and Referral (DRR) at the Center for Scientific Review. In addition to her scientific contributions as a researcher and administrator, she is an accomplished artist, using glass as her medium.

She spent most of her 25-year career at NIH in CSR. "I have a soft spot for CSR," Clark said. "It provides a service to the rest of NIH rather than any particular area of science. Its mission has spoken to me for a long time."

Except for a postdoc at Oklahoma State University with Dr. Kermit Carraway, Clark spent her early life in New England. Supportive teachers encouraged her to pursue a career in science. She grew up in Connecticut, majoring in chemistry at Bates College and earning her doctorate at Dartmouth. On the faculty of the University of Maine for 10 years, she was principal investigator on a National Cancer Institute grant to study sialylation of a tumor cell glycoprotein.

"I was trying to understand if the structure of a glycoprotein was related to the ability of tumor cells to evade the immune system," she explained about one of her studies.

A sabbatical at NIH in 1986 changed her life. She realized she enjoyed the Washington area, with its milder climate and active cultural life. She became exposed to science administration as a career path. And, she took a class in stained glass-making, which she said has led to a fulfilling "second life" as an artist.

Clark returned to NIH in 1990 through the year-long Grants Associates Program, rotating through review, programs and policy details. She became a scientific review officer at CSR (then the Division of Research Grants), then spent 7 years in review positions in the National Heart, Lung, and Blood Institute, before returning to CSR in 2004.

In addition to her work in DRR helping to direct grant applications to the appropriate institute or center and committee for peer review, she was the CSR research integrity officer.

"Anne is dedicated to the extramural process," said Dr. Suzanne Fisher, former DRR director. Fisher singled out Clark's role in handling early-stage investigator applications, the transition to electronic submission from paper applications and her care and discretion as research integrity officer. Clark, Fisher added, also played in a lunchtime bridge game for years.

As for her art, "the first sun-catcher I made, I was gone," Clark said. "It provides a creative outlet where I can design my own pieces and have artistic control."

In her CSR office, her evocative creations of the natural world hung to catch the light through the windowpanes. In addition to stained glass, Clark creates fused-glass pieces and paints directly on glass. She displays at a gallery and at craft shows, where she often shares a booth with her husband, an accomplished woodworker.

Though Clark has left her "9-to-5" scientific life behind, she continues to balance science and art as she works with the intricate chemical compositions that make up each piece of glass.

NIAMS Summer Program Trains Young Scientists

This past summer, 18 interns with diverse backgrounds and scientific interests spent 8 weeks in the NIAMS Summer Research Program. Flanking this summer's cadre are Dr. Robert Walker (r) chief, NIAMS Career Development and Outreach Branch, and scientific program manager Dr. Stephanie Mathews (l). The youngsters received career mentoring from senior researchers, attended lectures and symposia, engaged in basic and clinical research and gained experience that will help them pursue their career goals. Many had participated in the program before and returned to expand their skills. "I truly felt like I was part of the research team and knew that I was actively contributing to the project at hand," said one intern. "I am very grateful for being able to participate in this program, and thankful for the mentorship and guidance I have received." The program provides opportunities for high school, undergraduate, graduate and medical students. Students can apply online at www.training.nih.gov/programs/sip.

FEEDBACK

Have a question about some aspect of working at NIH? You can post anonymous queries at www.nih.gov/nihrecord/index.htm (click on the Feedback icon) and we'll try to provide answers.

Feedback: I recently completed a telework application and had to fill out a "home office evaluation" form that asked a lot of questions about my home work area. For example, I am apparently required to have hot and cold running water in the bathroom at home but the restrooms in my NIH building only have cold running water, no hot water and I can't even adjust the flow of the water. My home location is supposed to be asbestos-free but my NIH office has an asbestos ceiling. My home office furniture is supposed to be ergonomically correct but my NIH office is furnished with hand-me-down furniture that is certainly not ergonomically correct based on the neck and back pain I have at the end of the day. I am required to have supplies and resources close to my home office desk but many times I don't even have supplies for my work office because of budget issues. Air quality and ventilation at home is supposed to be adequate but the heating and cooling system in my NIH office rarely works and black grit comes out of the vents. Why does NIH have a higher standard for my telework location than provided for my NIH on-site location?

Response from Office of Research Services, the Office of Human Resources and the Office of Research Facilities: Thank you for your question about the telework safety evaluation form. Whether an employee is working at the official duty station or an alternate worksite, safety is an important matter. Teleworkers are responsible for ensuring that a workspace in their home is free of health and safety hazards. The form, whose content was developed with input from OSHA, is intended to help increase employees' awareness of safety considerations. It also helps supervisors and other telework-approving officials assess whether an alternate worksite will be conducive to performing work. The form is currently under revision to narrow the focus to the area in the residence that may be used for telework. OHR anticipates the final document to be more aligned with the updated checklist on the Office of Personnel Management's telework web site, http://1.usa.gov/1VbkS6C.

As for your NIH work environment, you should contact the Office of Research Services' Division of Occupational Health and Safety at (301) 496-3353 to schedule an ergonomic evaluation or (301) 496-2960 to report safety-related issues. You should also report any facility-related issues to the Office of Research Facilities by calling (301) 435-8000 or submit a maintenance request online at http://1.usa.gov/1KBRriS. Additionally, regarding the Office of Research Facilities, there is an Issue escalation process described at http://1.usa.gov/1NP5eYB should you need to escalate a chronic maintenance problem to the attention of an ORF manager.

Above, NIH director Dr. Francis Collins (l) hosts a roundtable discussion with Rep. Chris Van Hollen.

Below, Dr. Rob Rivers (c), NIDDK program director in the Office of Minority Health Research Coordination, chats at a medical board room briefing with Van Hollen, along with (from l) Dr. Jean Chin of NIGMS, Peggy Brandt Hansberger and Ned Culhane of the NIH Office of Legislative Policy and Analysis, and Dr. Allison Wise of NHLBI.

Congressman's Visit Shines Light on Potential Effects of Federal Shutdown

PHOTOS: ERNIE BRANSON

U.S. Rep. Chris Van Hollen (D-MD) dropped by NIH's Clinical Research Center on Sept. 22 for a science briefing with researchers in the NCI Pediatric Oncology Branch, a meeting with a research participant and a roundtable discussion with several NIH staffers.

Following the visit, the congressman held a Q&A session with members of the media to draw attention to the harmful effects a potential federal government shutdown could have on the lives of NIH patients and research.

Above, Dr. Lee Helman (r), acting director of NCI's Center for Cancer Research and CCR scientific director for clinical research, leads Van Hollen (c) and Collins (l) on a brief tour of a clinic and playroom.

Below, NCI senior investigator Dr. Brigitte Widemann (c), head of the pharmacology and experimental therapeutics section in the Pediatric Oncology Branch, talks about her research at a briefing with Van Hollen.

NSO Makes 11th NIH Visit

The National Symphony Orchestra performed for the 11th time at NIH on Sept. 22. Flute player Leah Arsenault (r) was the featured soloist in a concert that included the overture from Mozart's *The Marriage of Figaro*, Ravel's *Le Tombeau de Couperin*, Elgar's *Serenade for Strings-Larghetto*, two movements from Rodrigo's *Concierto Pastoral* and Debussy's *Petite Suite*. Conductor Jacomo Bairos led the NSO.

The concert packed not only the atrium of the Clinical Research Center, but also many of the upper floors of the hospital, where patients assembled to enjoy the music.

The event, part of the NSO's Sound Health Initiative, was sponsored by the Clinical Center and the Foundation for Advanced Education in the Sciences.

PHOTO: BILL BRANSON